

Total No. of Questions : 8]

[Total No. of Printed Pages : 4

Roll No

EE-305-CBGS

B.Tech., III Semester

Examination, June 2020

Choice Based Grading System (CBGS)

Network Analysis

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

iii) In case of any doubt or dispute the English version question should be treated as final.

1. a) Define and distinguish the following network elements with example. 7

i) Linear and non linear elements

ii) Active and Passive Elements

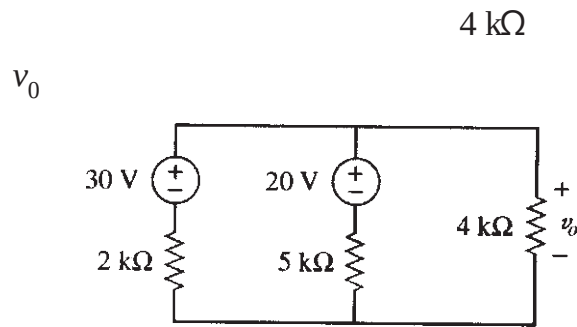
iii) Dependent and Independent Sources

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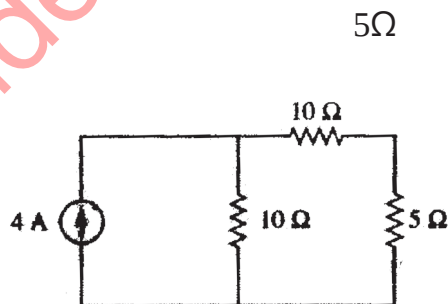
- b) Find the current through each element and potential difference v_0 across $4\text{ k}\Omega$ resistor. 7



2. Discuss the following. 14

- i) Tree Branch and link
- ii) Cut set and tie set matrices
- iii) Incidence matrix

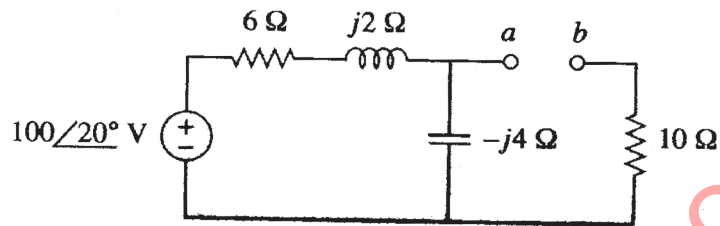
3. a) Find the current through $5\ \Omega$ resistor using Thevenin's theorem. 7



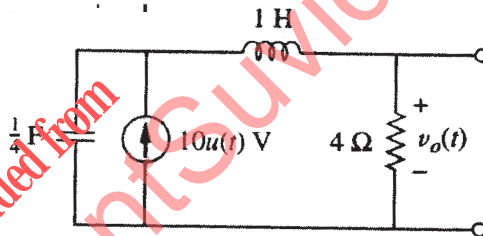
- b) State and prove Tellegen's theorem. 7

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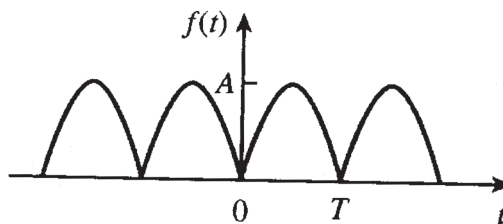
4. State and prove maximum power transfer theorem. Calculate maximum power transfer at terminal a-b, also calculate Thevenin resistance. 14



5. a) Determine $v_o(t)$ in the circuit of figure, assuming zero initial conditions. 7



- b) State and prove initial and final value theorem. 7
6. a) Determine the Fourier series of the waveform shown in Figure. 7



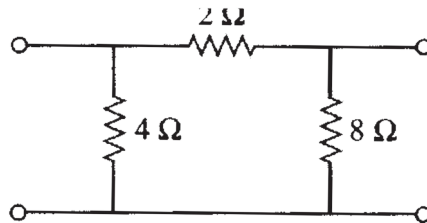
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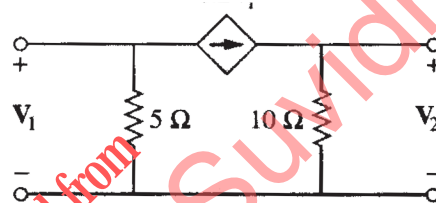
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b) Explain exponential form of Fourier series. 7

7. a) Determine the Z and Y parameters of given two port network. 7



b) Obtain the admittance parameters of given circuit. 7



8. Write short note on any two of following. 14

b) Substitution theorem

c) Series and Parallel resonance

d) Inter connection of two port networks

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